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portion means may be comprised of a mechanically resistive embodiment, such as that of Fig. 5, or of an electronic embodiment, such as the multipliers for Fig. 7. The control means or element can be mechanical, such as llc of Fig. 5, or electronic, such as in Fig. 7. Other features and elements of the invention may also be implemented in either mechanical or electrical form, as will be apparent to one skilled in the art from the teachings herein. -

In the claims:

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CM Claim 1. (twice amended) An improvement for a selectable phase shifter incorporating an output and a plurality of inputs, one of which is [tapped off of a resistance] coupled to [and extending between] an input signal and another which is coupled to a phase shifted input signal, the improvement comprising a further input coupled to a further phase shifted input signal, said signals having different relative phases [, and the resistance further extending and coupling to said further phase shifted input signal so as to allow an increased range of available phase shift.] and a portion means having an adjustment capability, which portion means is coupled to the plurality of inputs and said further input and responsive to the signals thereof to linearly pass a portion of at least one of the signals to said output, which portions are responsive to said adjustment of said portion means.

Claim 2. (twice amended) The improved selectable phase shifter of Claim 1 characterized in that said further phase shifted input signal is phase shifted by a different amount than [greater than 180 degrees with respect to the] the input signal or the phase shifted input signal.

further phase shifted input signal is derived directly from the input signal without substantial phase shift.

Claim 3 (twice amended) The improved selectable phase shifter of claim 1 characterized by the addition of another input coupled to an even further phase shifted input signal and said portion means coupled to said another input coupled to an even further phase shifted input signal with said portion means operable such that said device may output a portion of [and the resistance extending between and coupling to] said further phase shifted input signal and a portion of said even further phase shifted input signal so as to allow for an even further range of available phase shift.

Claim 5. The improved selectable phase shifter of claim 3 characterized in that said even further phase shifted input signal is phase shifted 360 degrees with respect to the input signal.

Claim 6. (twice amended) The improved selectable phase shifter of claim 3 [1] characterized by [the] said portion means includes a control element operable such that the device may output a portion of said input signal and a portion of [addition of the resistance extending between and coupled to] said even further phase shifted input signal [and the input signal] so as to allow for a[n] continuous available phase shift the equivalent of 360 degrees by said phase shifter.

Claim 7. (twice amended) The improved selectable phase shifter of claim 6 wherein said portion means includes a [wherein said] resistance element configured [extends] in a ring and having taps [form from] coupled to the input

the aforementioned inputs [back to the input signal].

Claim 8. (twice amended) The improved selectable phase shifter of Claim 1 characterized in that said portion means includes a selectable resistance tap, and the output [the resistance] is coupled to said selectable resistance tap [a continuous resistive means].

Claim 9. (twice amended) The improved selectable phase shifter of Claim 8 [1] characterized in that the selectable resistance tap is a mechanically movable [selectable] resistance tap.

Claim 10. (twice amended) The improved selectable phase shifter of Claim 8 [1] characterized in that the selectable resistance tap is an electrically [selectable] changeable resistance tap.

Claim 11. (twice amended) The improved selectable phase shifter of Claim 1 wherein said portion means [the resistance] is controlled by an electrical signal.

Claim 12. (twice amended) The improved selectable phase shifter of Claim 1 characterized in that the portions of the signals to the output are [resistance is] developed in a tapped delay line.

Claim 13. (twice amended) An improvement for a phase shifter incorporating an input signal and a phase shifted input signal having a different relative phase, characterized in that the input signal is coupled to [passed through] a first multiplier means and said phase shifted input signal is coupled to [passed through] a second multiplier means, said first multiplier means and said second multiplier means having [an] a single common output[,] and operating to output a selectable phase shifted

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from said phase shifted input signal and control means to provide control signals to control said first multiplier means and said second multiplier means to selectively alter said first and second portions so as to provide for a selectable phase shifted signal at said common output, the phase of which changes in response to the amount of said portions.

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Claim 14. (twice amended) The improved phase shifter of claim 13 characterized by said [means to] control means including [being] a control voltage means connected to said first multiplier means and second multiplier means such that the signal applied to the multiplier is altered by the control voltage [to control said portions].

Claim 15. (twice amended) An improvement for a selectable phase shifter incorporating an output comprised of a movable tap coupled to [tapped off of] a resistance element, Said element extending from a first fixed tap [and] responsive to an input signal [through] past a second fixed tap responsive to a phase shifted input signal to a third fixed tap responsive to another signal, said signals having different relative phases, the improvement comprising the resistance element extending in continuous fashion from the first fixed tap, [input signal] past said second fixed tap, past said third fixed tap, [phase shifted input and another signals] back to said first fixed tap [the input signal].

Claim 16. An improved selectable phase shifter for an input signal, said shifter comprising means to delay the input signal to provide a delayed input signal, an output, variable multiplier means for the input signal for providing a multiplied input signal as part of said output,

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said output, and means to control said variable multiplier and said second variable multiplier so as to produce a selectable phase shifted signal at said output.

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Claim 17. (amended) Apparatus for providing a phase shifted version of an electronic signal, including in combination a phase shift means responsive to said electronic signal to provide three or more relatively phase shifted signals, one of which may be equivalent to said electronic signal, a impedance [resistive] means having an output, an adjustment element and three or more terminals, with each of said terminals being operative to receive [responsive to] one of said phase shifted signals and providing a selectively variable impedance through said adjustment element between said terminals and said output, [and] [with] said adjustment element operating to selectively vary said impedances from a plurality of terminals to said output to allow a first portion of [the signal from] said output to be derived from one of said phase shifted signals in response to the aforementioned impedance through which said phase shifted signal flows and a second portion to be [being] derived from a second of said phase shifted signals in response to the aforementioned impedance through which said second phase shifted signal flows which portions may include zero for one of the signals, and which portions are responsive to said adjustment element.

Claim 18. (amended) Apparatus as claimed in Claim 17 wherein said [resistive element] impedance means [is comprised of] includes a resistor [and] with said adjustment element [is] comprised of an adjustable tap on said resistor.

Claim 19. (amended) Apparatus as claimed in Claim

any [said first] portion of any one or two phase shifted signals in response to said adjustment element.

Claim 20. (amended) Apparatus as claimed in Claim 17 wherein said [resistive] impedance means is responsive to at least four relatively phase shifted signals.

Claim 21. (amended) A resistive device having a resistance means with three or more receiving terminals configured to receive [be responsive to] electronic signals all having different relative phases, and having an adjustment element controllable to provide an output signal at a further terminal which output signal includes one or a combination of two of the [said] electronic signals which are applied to a given two of said receiving terminals, [which combination includes portions which may be zero for one of said two signals,] which [portions are] combination is controlled by said adjustment element such that said device may pass any portion of one or two phase shifted signals to the output.

Claim 22. (amended) Apparatus as claimed in claim 21 wherein said resistance means has four or more receiving terminals configured to [be responsive to] receive electronic signals.

Claim 23. (amended) Apparatus as claimed in claim 21 wherein said adjustment element is adjustable in a fashion such that said output may include a combination of portions of a first and a second of said electronic signals or a combination of portions of said second and a third of said electronic signals.

Claim 24. (amended) Apparatus as claimed in claim 21 wherein said resistance means is arranged in a continuous

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21 wherein said resistance means is arranged in a circular fashion with said [responsive] receiving terminals being arranged substantially equally spaced along said resistance means.

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